



SHALLOW WATER DEVELOPMENT FOR WILDLIFE

Conservation Sheet

644a

Natural Resources Conservation Service (NRCS)

Nov. 1999



WHAT IS A SHALLOW WATER DEVELOPMENT FOR WILDLIFE?

The purpose of shallow water development is to provide habitat for water dependent wildlife such as migratory shorebirds, waterfowl, reptiles, amphibians and aquatic mammals. Shallow water bodies are from 6 inches to 6 foot deep with the majority of the water less than 18 inches. Proper management can increase and maintain desirable foods for waterfowl and other species of wildlife.

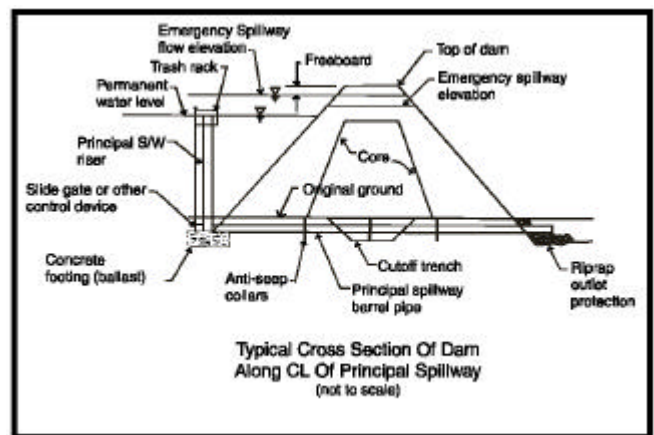
Shallow water areas may be permanent or seasonal depending on the objectives of the development. Seasonal developments are very beneficial for many migratory species. Although there is no minimum size limit for a shallow water development, areas greater than ¼ of an acre will provide more diverse habitats and be more beneficial for many wildlife species.

CONSTRUCTION

Permits: Shallow water developments are often located in wet areas, depressions or in small drainage areas. Wetland programs such as the Wetland Provisions of the Farm Bills or the Michigan Wetlands Protection Act or local township regulations may apply to private landowners. All necessary permits should be acquired by the landowner before construction begins. Also the impacts of the development on upstream and downstream landowners shall be evaluated.

Excavation or Impoundments: Shallow water developments are usually dug with either a bulldozer, dragline or hydra unit. Water pool areas may be formed from excavations, impounding existing drainage ways, or a combination of both. Sideslopes should range from 8:1 to 16:1 unless muskrat habitat is the objective in which case the

sideslopes could be up to 3:1. Shorelines should be irregular in shape. For waterfowl purposes, at least 50 percent of the surface water area should be less than 18 inches. For reptiles, amphibians, and aquatic mammals, a maximum of 30 percent of the surface water area will have water depths from 3 to 6 feet deep with the remainder below 3 feet deep. Excavated spoil will be spread on upland areas in a manner that will not block surface water from entering the pond. Topsoil should be re-spread over excavated areas in the pool to provide a seed source for vegetation.



Spillway: Impoundments and excavated ponds that have surface water entering them will have an emergency spillway installed to insure that the water is safely controlled. A mechanical structure such as a drop pipe will be installed when water levels are to be manipulated for moist soil management. See the Conservation Sheet, 646a "Shallow Water Management for Wildlife", for information on moist soil management.

OTHER MANAGEMENT CONSIDERATIONS

Disturbances. Human activities in and around the management unit can have a significant impact on the behavior of wildlife. Activities with loud overwater movement cause the most disturbance, while quiet shoreline activities cause the least. Disturbances cause waterbirds to move to other feeding grounds, and may lower their productivity of nesting or brooding. Limit human disturbances while waterbirds are present. Consider screened buffer zones to separate disturbances (roads) from the site.

Buffers. The shallow water area will benefit from a permanent vegetative buffer around it. Filter strips can limit sediment from entering the area. A border of grasses and legumes will buffer the area from surrounding land uses and provide additional wildlife habitat.

Disease. Mass die-offs of waterfowl can occur at a particular site due to disease. A common Michigan disease that occurs around shallow water areas is avian botulism. It can be rapidly transmitted from dead birds to healthy birds by infected maggots. Prompt removal and disposal of dead birds and fish can control the spread of the disease. Flooding sites that have been dry for a long time, in summer when temperatures are high, is generally not recommended

except for shorebird management. Under these conditions the bacterium that causes botulism can flourish.

OPERATION AND MAINTENANCE

Livestock should not be allowed free access to the shallow water development. Routine maintenance on the impoundment will include mowing and fertilizing the vegetation on the dam and spillway, preventing trees and brush from growing on the dam and spillway, repairing any erosion in the spillway, removing debris from the trashrack, and repairing muskrat or beaver damage.

SHALLOW WATER DEVELOPMENT FOR WILDLIFE DESIGN WORKSHEET

Farm: _____ Field: _____ Shallow Water Unit: _____ Date: _____

Structural Components Required

Source of water: (Check if required and see approved engineering design for site)

_____ Diversion. _____ Pond/reservoir _____ Well with pump. _____ Pump.	_____ Water control structure on tile line, ditch, or dike. _____ Other source to be developed _____ Surface water (Seasonal flood events and/or surface runoff is usually sufficient)
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Conditions Before :

Planned Conditions:

Cowardin Classification _____

Cowardin Classification _____

Considerations:

_____ Wetland Permits
 _____ Utilities Notified
 _____ Impacts on Upstream and Downstream Landowners
 _____ Impacts on Threatened and Endangered Species

Excavation required: (see design for site)

Average depth _____ Average length _____ Average width _____ Total cubic yards _____

Dikes required: (see design for site)

Average height _____ Total length _____. Total cubic yards _____.

Mechanical Spillway requirements: (see design for location)

Diameter _____ Total length _____ Materials _____

Earthen Spillway requirements: (see design for location)

Average width _____ Total length _____ Average Depth _____

Vegetative Buffer:

Width _____ Length _____

Seeding Required:

_____ Acres of seeding on dikes. See Job Sheet 327

_____ Acres of seeding for buffer strips. See Job Sheet 327.

Seeding Mixture:

LOCATION AND LAYOUT SKETCH

TYPICAL PROFILE

Approval signature _____

MAINTENANCE REQUIREMENTS: _____

